



A Quality and Technology Network

ISQ

CORPORATE SOCIAL RESPONSIBILITY

A CASE STUDY IN ANGOLA

E. Dias Lopes
Nuno Cosme

Introduction

In 1995 World Business Council for Sustainable Development (WBCSD) has been addressing the challenges and opportunities of sustainable development based on three fundamental and inseparable pillars:

- **Generation of economic wealth**
- **Environmental improvement and social responsibility.**
- **Social responsibility (accepted definition of CSR in WBCSD, 2000)**



International Workshop on Pollution and Sustainable Development

November 1-2, 2006 – Colorado Springs, Colorado

Introduction

Corporate Social Responsibility (CSR) is defined as:

"a concept whereby companies integrate social and environmental concerns in their business operations and in their interaction with their stakeholders on a voluntary basis"
(Commission Green Paper, 2001)

CSR is no longer seen as a burden but also contributing to its long-term prosperity.



International Workshop on Pollution and Sustainable Development

November 1-2, 2006 – Colorado Springs, Colorado



International Workshop on Pollution and Sustainable Development

November 1-2, 2006 – Colorado Springs, Colorado

Introduction

CSR sets its basis on social and environmental concern on all activities and interactions with stakeholders, but should also consider economic aspects and feasibility/viability.

CSR cannot be restrained to legal compliance. It demands sustained investment in human assets, health, safety and natural resources management, maximize contribution to society and minimize adverse impacts.



Case Study

CSR commitment of SONANGOL (national and leading company in the oil industry in Angola) is expressed through several initiatives together with social and environmental projects of construction, rehabilitation or support. In this case study, this commitment is shown in a rehabilitation project of abandoned oil fields.

The present case study deals with massive environmental damage caused by oil spills.



International Workshop on Pollution and Sustainable Development

November 1-2, 2006 – Colorado Springs, Colorado



Major oil spill on soil and water

International Workshop on Pollution and Sustainable Development

November 1-2, 2006 – Colorado Springs, Colorado



Main objectives

- **Decommissioning of all equipment and infrastructures related to the former oil exploration in the area**
- **Insure the re-growth of the vegetation on the sites**
- **Integration of local population on the new environment**



International Workshop on Pollution and Sustainable Development

November 1-2, 2006 – Colorado Springs, Colorado

Main objectives

This project, located in Kwanza basin, South of Luanda – Angola, was started in 1999, and consisted on various development phases:

- **Rehabilitation of former oil field area (environmental programme)**
- **New infrastructures (social programme)**
- **New production (economic programme)**



International Workshop on Pollution and Sustainable Development

November 1-2, 2006 – Colorado Springs, Colorado

Main objectives

First programme (the environmental rehabilitation) several interventions were considered and soil rehabilitation was achieved successfully, with 138 different locations including wellheads, pits, pipelines, manifolds, valves and other infrastructures removed and soil analyzed for hydrocarbon content.

Tasks were:

- 1. Dismantling of infrastructures and removal operations;**
- 2. Cutting and removal of pipelines;**
- 3. Environmental rehabilitation;**
- 4. Reforestation.**



International Workshop on Pollution and Sustainable Development

November 1-2, 2006 – Colorado Springs, Colorado

Main objectives

Natural lagoon (QUENGUELA lagoon) was also recovered by means of soil rehabilitation and water quality has recovered since, together with the introduction of fish species.

Successful rehabilitation was achieved and presently local fauna and flora thrive and grow strong.





International Workshop on Pollution and Sustainable Development

November 1-2, 2006 – Colorado Springs, Colorado

Environmental Rehabilitation

Some oil ponds or heavily oily lagoons were found, caused by damage on the wellheads and pipelines rupture or smaller leakage.

The oil (pollutant type 1) found here was pumped to a mobile tank specially equipped and transported to a refinery.

Pasty sludge and soil with high sludge content (pollutant type 2) was found in several sites and collected and disposed into a confinement cell, as described ahead.



International Workshop on Pollution and Sustainable Development

November 1-2, 2006 – Colorado Springs, Colorado

Environmental Rehabilitation

The dry sludge and soil with TPH content above 10.000 ppm (pollutant type 3) were mixed with clean soil so that TPH would get below the threshold and buried in pits.

The tight confinement technique applied consisted on the construction of confinement cells out of HDPE (High Density Polyethylene) and geotextile.

All application methods were verified and approved, according to a previously developed and validated protocol.



International Workshop on Pollution and Sustainable Development

November 1-2, 2006 – Colorado Springs, Colorado

Environmental Rehabilitation

Environmental advantages of the tight confinement of the pollutants are:

- **Minimization of transport of pollutants;**
- **Isolation of the pollutants from humans, animals and vegetation;**
- **Isolation of the pollutants from rain water or watering (agriculture) and minimization of the possibilities of leaching;**



International Workshop on Pollution and Sustainable Development

November 1-2, 2006 – Colorado Springs, Colorado

Environmental Rehabilitation

The confinement does not destroy the pollutant, at least not on a short-term, and presents certain disadvantages like:

- **Maintaining the characteristics and properties of the pollutants;**
- **The restrained use of the sites where pollution is confined;**
- **The theoretical possibility of contamination of the groundwater.**



Environmental Rehabilitation

In the particular case study, the described disadvantages are minor because:

With time, the hydrocarbon pollutants will consolidate and become solid;

The occupied areas are very small compared with the immensity of the rest of the territory;



International Workshop on Pollution and Sustainable Development

November 1-2, 2006 – Colorado Springs, Colorado

Environmental Rehabilitation

The groundwater being located at dozens of meters and since the non-penetration of the sludge in the soil, the groundwater contamination risk is low.



International Workshop on Pollution and Sustainable Development

November 1-2, 2006 – Colorado Springs, Colorado

Environmental Rehabilitation

Each location where dismantling operations were conducted, the uncontaminated soil was decompressed by ripping and forestation initiated.

Any remaining contaminated soil fraction was removed and disposed on pits on location after mixing with clean soil.

The sealed pits were then covered with 50 cm of clean soil.

This upper layer was then prepared to receive vegetation.



International Workshop on Pollution and Sustainable Development

November 1-2, 2006 – Colorado Springs, Colorado

Environmental Rehabilitation

Forestation consisted on tree plantation with a density of 1 tree/100 m².

Tree species considered were similar to natural local vegetation.



International Workshop on Pollution and Sustainable Development

November 1-2, 2006 – Colorado Springs, Colorado

Environmental Rehabilitation

In a few weeks vegetation started to grow and planted trees successfully strove. Small bushes were found after 2-3 months and land covered as neighbor areas within 6-8 months.



International Workshop on Pollution and Sustainable Development

November 1-2, 2006 – Colorado Springs, Colorado



International Workshop on Pollution and Sustainable Development

November 1-2, 2006 – Colorado Springs, Colorado

Social Programme

The social programme was created to help local populations and develop some basic infrastructures. This programme has included:

- **A water supply system put in place by means of drilling seven new water boreholes – of about 50 m³ / hour, and distribution in a pipeline of 17 Km long;**
- **The construction of a school together with teachers housing. It was also installed a solar power system for water heating;**



International Workshop on Pollution and Sustainable Development

November 1-2, 2006 – Colorado Springs, Colorado

- **The construction of public bathrooms, laundries, water fountains and small cultural forums;**
- **Road repairing of the only access road to the village to communicate with neighbor villages and to Luanda to sell their products at local markets.**



International Workshop on Pollution and Sustainable Development

November 1-2, 2006 – Colorado Springs, Colorado



International Workshop on Pollution and Sustainable Development

November 1-2, 2006 – Colorado Springs, Colorado

Economic Programme

The commercial programme was designed and developed to help local population to cultivate and transform land products and animal production.

In the first aspect of this programme, land was given to farm mandioc, extensively cultivated as an annual crop for its edible starchy tuberous root.



International Workshop on Pollution and Sustainable Development

November 1-2, 2006 – Colorado Springs, Colorado

Economic Programme

Flour is then made by leaching and drying the root of the plant and was implemented in a semi-industrial production.

Other fruit and vegetables were also cultivated.

The second aspect was animal production by giving infrastructural conditions



International Workshop on Pollution and Sustainable Development

November 1-2, 2006 – Colorado Springs, Colorado

Social Impact

Creation of jobs, occupation for local population, helps to raise living conditions and domestic income.

CSR, the two major features were considered, environment intervention and social development.

CSR applies to a wide variety of company activities, especially in enterprises with strong connection with people and their country in very different social and environmental settings.



International Workshop on Pollution and Sustainable Development

November 1-2, 2006 – Colorado Springs, Colorado

Social Impact

This particular development project revealed evident and profitable results for local communities while fulfilling CSR commitment on environment rehabilitation and social improvement of working and living conditions of these people.



International Workshop on Pollution and Sustainable Development

November 1-2, 2006 – Colorado Springs, Colorado



A Quality & Technology Network

Thank You

E DIAS LOPES (edlopes@isq.pt)

NUNO COSME (nmcosme@isq.pt)

www.isq.pt